

Application Serial No. 10/587,069  
Reply to Office Action of October 10, 2007

PATENT  
Docket: CU-4970

### REMARKS

In the Office Action, dated October 10, 2007, the Examiner states that Claims 11-28 are pending and Claims 11-28 are rejected. By the present Amendment, Applicant amends the claims.

In the Official Action, Claims 11-28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 and 10-14 of copending Application No. 11/039,278. Claims 11, 19, 21, 23, 25, and 27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12, 19, 21, 23, 25, and 27 of copending Application No. 10/587,140. The Applicant has filed a terminal disclaimer with respect to both copending applications, and therefore, the double patenting rejections should be deemed overcome.

In the Official Action, Claims 15-16 are objected to because the word "coumarin" was misspelled. The Applicant has corrected the spelling, and therefore, the objections to Claims 15-16 should be overcome.

In the Official Action, Claims 11-20 and 25-26 are rejected under 35 U.S.C. § 102(b) as being anticipated by Gibbons (U.S. 2003/0232930).

The Applicant respectfully disagrees with and transposes the anticipation rejection to Gibbons. Claim 1 of the present application claims the constituent material of the respective photo alignment layer has a different composition from each other. In contrast, Gibbons merely discloses that "the pair of substrates can both contain optical alignment layers or a conventional alignment layer (e.g., mechanically buffered, i.e., rubbing layer) can be used as the second alignment layer comprising the above-mentioned hybrid polymer or a different polymer." (paragraph [0082]). In other words, Gibbons discloses (1) optical alignment layers can be formed on the pair of substrates; or alternatively, an optical alignment layer can be formed on one of the substrate and a conventional alignment layer (such as rubbing layer) can be formed on the other substrate; and (2) in the latter case, the conventional alignment layer (such as rubbing layer) may contain a certain hybrid polymer, or may contain a polymer different from the certain hybrid polymer. Accordingly, Gibbons does not disclose that each of the two optical alignment layers contain a polymer different from each other when the two optical alignment layers

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are formed on a pair of substrates. Furthermore, in Gibbons, Example 19 displays the same kind of hybrid polymer is used in the two optical alignment layers. Gibbons is completely silent regarding the use of different polymers for the respective two optical alignment layers. Therefore, Gibbons does not anticipate the present invention because Gibbons does not disclose that which is claimed in the present invention, and the Applicant respectfully requests that the anticipation rejection be withdrawn.

Moreover, the Applicant has amended Claim 1 of the present application to more specifically claim that the ferroelectric liquid crystal is a liquid crystal having no smectic A phase in a phase series thereof. As the Examiner pointed out in page 6 of the Official Action, Gibbons fails to disclose that the ferroelectric liquid crystal does not have a smectic A phase in a phase series thereof. This is an important feature of the present invention because ferroelectric liquid crystals which have no smectic A phase in its phase series easily generates orientation defects such as double domains. Using the constituent material of the respective photo alignment layer which has a different composition from each other can achieve the advantageous effect of restraining the generation of double domains. When the generation of double domains is restrained, mono-domain alignment of the ferroelectric liquid crystal can be obtained. Therefore, in the alternative, the Applicant's current amendment to Claim 1 should overcome the anticipation rejection to Gibbons.

In the Official Action, Claims 21-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gibbons, as applied to claims 11-20 and 20-26, and in further view of Yamazaki (U.S. 2003/0058210). Claims 27-28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gibbons as applied to claims 11-20 and 20-26, and in further view of Walker (U.S. 5,977,942).

As was indicated above, Gibbons does not disclose the constituent material of the respective photo alignment layer has a different composition from each other. Yamazaki does disclose a ferroelectric liquid crystal which exhibits mono-stability and which has no smectic A phase in its phase series; however, the reference does not disclose anything related to the orientation defects of the ferroelectric liquid crystal. Because the combination of the references neither teaches nor suggests that which is claimed in the present application, the present invention is not obvious to that which is disclosed in the cited references, and the Applicant respectfully

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requests this rejection be deemed overcome.


With respect to the obviousness rejection to Gibbons in view of Walker, because neither Gibbons nor Walker disclose the constituent material of the respective photo alignment layer has a different composition from each other, this rejection should be deemed overcome.

In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

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Date



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